

Partial Translation  
of

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Partial Translation

An anti-tumor protein complex having a constituent consisting an anti-tumor immunoglobulin and also a constituent consisting a substantial fragment A of the diphtheria toxin and expressed by the following expression:

Ab (-NHCO-X-S1-S2-FA)  $n$  (I)

wherein Ab indicates the constituent comprising an anti-tumor immunoglobulin and FA indicates the constituent consisting a substantial fragment A of the diphtheria toxin. Further in the expression, X indicates an alkylene group or a phenylene group having or not having a branch including 1 to 5 carbon atoms. N in the amide bond indicates a nitrogen atom from the amino group in the anti-tumor immunoglobulin. Both S1 and S2 are sulfur atoms, and S2 indicates a sulfur atom from the disulfide bond in the diphtheria toxin.  $n$  indicates an integral number in the range from 1 to 5.

The anti-tumor protein according to the present invention is obtained by causing a reaction among an anti-tumor immunoglobulin, a substantial fragment A of the diphtheria toxin, and a heating agent having one active ester group and one active disulfide group in the molecule. There is no specific limitation over the sequence of and method for the reaction, but preferably at first one to five amino groups in the anti-tumor immunoglobulin are reacted to a bridging agent, and then the resultant product is reacted to the substantial fragment A of diphtheria toxin having at least one thiol group therein.